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| *Title:* | **Restriction of bi-prediction for IvDC and IvDCShift candidates** | | |
| *Status:* | Input Document | | |
| *Purpose:* | Proposal | | |
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**Abstract**

In the current 3D-HEVC, there are two candidates for inter-view disparity compensation in the merge list. First, IvDC candidate is derived by depth oriented neighbouring block based disparity vector (DoNBDV). Second, IvDCShift candidate is set to IvDC candidate shifted by 4. IvDC and IvDCShift candidates are derived for each List 0 and List1. However, motion information for List 0 and List 1 are exactly same in the specification. In this contribution, restriction of bi-directional for IvDC and IvDCShift candidates is proposed. The proposed method is to use a uni-directional prediction for IvDC and IvDCShift candidates. The experimental results are no impact under the common test conditions.

1. **Introduction**

As shown Figure 1, a reference view for IvDC and IvDCShift candidates is available both List 0 and List 1. In that case, IvDC and IvDCShift candidates can derive a disparity vector from each reference list and conduct bi-directional prediction. However, bi-prediction is useless due to the disparities are always identical. A reference index and a disparity vector for IvDC and IvDCShift candidates are used for each CU.

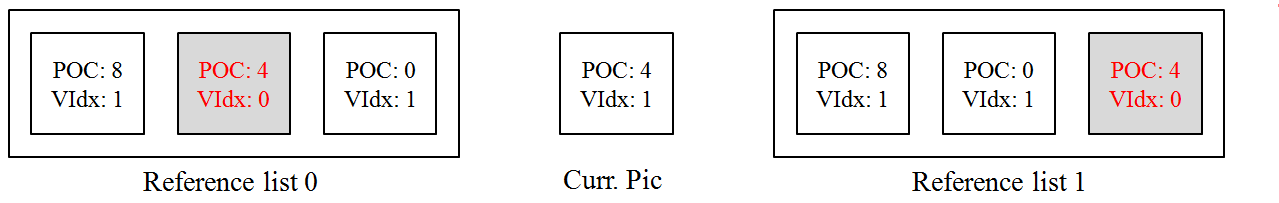
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Figure 1. Conventional intra prediction mode directions

1. **Proposed method**

In this contribution, restriction of bi-directional for IvDC and IvDCShift candidates is proposed. The proposed method is to use a uni-directional prediction for IvDC and IvDCShift candidates.

1. **Experimental results**

The proposed method is integrated on HTM-12.0 [1]. Table 1 shows the results under the common test condition [2]. The experiments results show that the proposed method is no coding loss.

**Table 1. Performance for the proposed method (CTC)**



1. **Conclusion**

Disparity derivation method for depth coding is proposed in this contribution. A default reference view index is used for disparity derivation for depth instead of a fixed reference view index which equals to 0. There is no impact of coding efficiency for the synthesized views under CTC conditions.

# Patent rights declaration(s)

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1. **References**

[1] HTM-12.0, https://hevc.hhi.fraunhofer.de/svn/svn\_3DVCSoftware/tags/HTM-12.0.

[2] K. Müller, A. Vetro, “Common test conditions of 3DV core experiments,” Document of Joint Collaborative Team on 3D Video Coding Extension Development, JCT3V-G1100, Jan. 2014.